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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/820,024	04/08/2004	Masaaki Oyamada	0092/012001	7572
22893	7590	11/09/2007		
SMITH PATENT OFFICE 1901 PENNSYLVANIA AVENUE N W SUITE 901 WASHINGTON, DC 20006			EXAMINER TSOY, ELENA	
			ART UNIT 1792	PAPER NUMBER
			MAIL DATE 11/09/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

Application No.

10/820,024

Applicant(s)

OYAMADA ET AL.

Examiner

Elena Tsoy

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 26 October 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 3, 5, 7 and 9-39 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 3, 5, 7 and 9-39 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 April 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 10/26/2007.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

***Response to Amendment***

Amendment filed on October 26, 2007 has been entered. Claims 3, 5, 7, and 9-39 are pending in the application.

***Double Patenting***

Provisional rejection of Claims 3-10 on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 3-15 of copending Application No. 10/820,025 in view of Henry et al (US Patent No. 6,156,390) has been withdrawn due to filing a terminal disclaimer.

***Claim Objections***

Objection to claims 3 and 34 because of the informalities has been withdrawn due to amendment.

**The Examiner Note:**

1. A phrase "initial thin nickel film" was interpreted by the Examiner according to the specification as originally filed as a film having thickness within a range of 0.001-2 microns (See published Application, P31).

***Declaration under 37 CFR 1.132***

2. The Declaration under 37 CFR 1.132 filed October 26, 2007 is insufficient to overcome the rejection of claims 3, 5, 7, and 9-34 based upon primary reference of JP 1-242782 because Applicants' experiments were carried out not in accordance to the ground of rejection presented by the Examiner. Note that the Examiner has considered claimed step III to be obvious over the JP 1-242782 reference. However, the Declaration omitted entirely ***obvious*** claimed step III.

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 3, 5, and 7-39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kawakami et al (JP 1-242782) for the reasons of record set forth in paragraph 5 of the Office Action mailed on 4/26/2007 because amendment is directed to minor informalities and, thus, does not change the scope of claimed invention.

5. Claims 3, 5, and 7-39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kawakami et al in view of Weber et al (US 6,274,241) for the reasons of record set forth in paragraph 6 of the Office Action mailed on 4/26/2007.

6. Claims 3, 5, and 7-39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kawakami et al/Kawakami et al in view of Weber et al/, further in view of Segawa et al (JP 2001-316834) for the reasons of record set forth in paragraph 7 of the Office Action mailed on 4/26/2007.

***Response to Arguments***

7. Applicants' arguments filed October 26, 2007 have been fully considered but they are not persuasive.

(A) Applicants argue that Kawakami et al. do not disclose the steps of (II) dispersing the core particles in an initial thin film-forming solution containing nickel ions, a reducing agent, and a complexing agent comprising an amine to prepare an aqueous suspension, and reducing the

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nickel ions to form initial thin nickel film on a surface of each of the core particles; and (III) adding a first solution, which contains a nickel ion-containing solution and the complexing agent, and a second solution, which contains a reducing agent, to the aqueous suspension individually and simultaneously, the aqueous suspension containing the core particles provided with the initial thin nickel films and the complexing agent to perform electroless plating so that columnar structures extending in a direction of a thickness of a nickel film are formed as claimed in independent claims 3, 16, 33 and 34.

The Examiner respectfully disagrees with this argument. Kawakami et al. disclose **claimed step (II)**, which corresponds to the **step (III) of the Examiner's Rejection** (See Office Action mailed on 4/26/2007). Further, the Examiner has recognized that Kawakami et al failed to teach that a second plated layer is applied over said first plated layer in the presence of wastewater of a first plating solution. However, it was the Examiner's position that **claimed step (III)** would have been obvious over Kawakami et al according to well-known principle of re-applying with the expectation of providing the desired thickness of a final coating.

(B) Applicants submit that the method for producing a conductive electroless plated powder described in the present invention is different from the method described in Kawakami et al. so that the conductive electroless plated powder of the present invention is not identical to the conductive electroless plated powder of Kawakami et al. Specifically, Kawakami et al. disclose an aged plating solution may be added to an aqueous suspension containing a powder of a core material having reduced noble metal ions thereon. However, even if an aged plating solution is added to the aqueous suspension, an initial thin film is not formed.

The Examiner respectfully disagrees with this argument. The Examiner stated in her Rejection, "(II) dispersing the core particles in a dispersion medium such as an aqueous solution

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containing at least one component constituting electroless plating solution, in particular, an aqueous solution of complexing agent (See Translation, page 17, paragraph 2), e.g. wastewater of plating containing a complexing agent (See Translation, page 17, five bottom lines); (III) adding at least two solutions constituting electroless plating solution, e.g. a nickel ion-containing solution, a complexing agent solution such as tartaric acid, glycine or ethylenediamine solution (See Translation, page 18, lines 6-7; page 25, Table 5), and a solution of reducing agent such as sodium borohydride or dimethylamine borane (See Translation, page 19, paragraph 3), individually and simultaneously to the aqueous suspension containing the dispersion (II) of core particles to perform electroless plating (See Translation, page 19)".

**In other words, in contrast to Applicants argument, Kawakami et al teach adding fresh nickel ion-containing solution, a complexing agent solution and a solution of reducing agent was added to the aged plating solution containing dispersed core particles.**

(C) Applicants submit that in Kawakami et al., the purpose of the description of the addition of an aged plating solution to an aqueous suspension containing a powder of a core material having reduced noble metal ions thereon lies reusing unreduced metal ions and a complexing agent contained in the aged plating solution without disposing of the plating solution. However, since the reducing agent no longer has a reducing power, the reducing agent cannot be reused. In order to clarify this point, the Declaration under 37 CFR 1.132 attached in this amendment proves that an initial thin film is not formed on the surface of the core powder. Therefore, Kawakami et al. do not disclose the step of dispersing the core particles in an initial thin film-forming solution containing nickel ions, a reducing agent, and a complexing agent comprising an amine to prepare an aqueous suspension, and reducing the nickel ions to form

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initial thin nickel film on a surface of each of the core particles as claimed in the present invention.

The Examiner respectfully disagrees with this argument for the reasons discussed above in (B).

(D) Applicants submit that in Kawakami et al., a nickel ion-containing solution used in the step of electroless plating does not contain a complexing agent. Specifically, Kawakami et al. disclose that at least two solutions constituting a plating solution are individually and simultaneously added. In addition, Kawakami et al. disclose that a complexing agent can be used in the plating solution. However, Kawakami et al. do not disclose that in the two solutions of the plating solution, one of the solutions that contain metal ions contains a complexing agent. None of examples described in Kawakami et al. discloses the addition of a complexing agent to either of two solutions of the plating solution. Therefore, Kawakami et al. do not disclose the step of adding a first solution, which contains a nickel ion-containing solution and the complexing agent, and a second solution, which contains a reducing agent, to the aqueous suspension individually and simultaneously, the aqueous suspension containing the core particles provided with the initial thin nickel films and the complexing agent to perform electroless plating so that columnar structures extending in a direction of a thickness of a nickel film are formed as claimed in the present invention.

The Examiner respectfully disagrees with this argument. First of all, a phrase of Kawakami et al. “**at least two** solutions constituting a plating solution are individually and simultaneously added” includes **more than two** solutions, i.e. all three solutions of three important plating ingredients including complexing agent. Note also that at page 15, Kawakami et al. teach that **the reducing agent is added when a complexing agent is present.**

As to Examples of Kawakami et al., it is well settled that patents are relevant as prior art for all they contain including prior art's broad disclosure. **Disclosed examples** and preferred embodiments do **not** constitute a **teaching away** from a **broad disclosure** or nonpreferred embodiments. See MPEP 2123.

(E) Also, as described above, Kawakami et al. disclose a complexing agent can be used in a plating solution. However, Kawakami et al. neither describes nor suggests that the same type of complexing agent as that contained in the aqueous suspension containing the powder of a core material having an initial thin film on the surface thereof is used as the complexing agent. None of the examples described in Kawakami et al., discloses the addition of a complexing agent to either of two solutions of the plating solution. Therefore, as described above, Kawakami et al. do not disclose the step of adding a first solution, which contains a nickel ion-containing solution and the complexing agent, and a second solution, which contains a reducing agent, to the aqueous suspension individually and simultaneously, the aqueous suspension containing the core particles provided with the initial thin nickel films and the complexing agent to perform electroless plating so that columnar structures extending in a direction of a thickness of a nickel film are formed as claimed in the present invention.

The Examiner respectfully disagrees with this argument. As was discussed above, Kawakami et al. do disclose claimed step (II); claimed step III is obvious over Kawakami et al.; and examples do not teach away from a broad disclosure.

(F) Applicants submit that Weber et al. do not make up for the deficiencies in Kawakami et al. Weber et al. do not disclose the claimed steps of (II) and (III).

The argument is unconvincing because Weber et al. is a *secondary* reference which is relied upon to show that *nickel* film can be applied to glass powder by forming first a nucleation



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layer of Pd metal on the surface of the glass powder (See Example 1), and then exposing a nucleated glass powder to electroless plating solution containing a nickel salt, a reducing agent, and complexing agent.

(G) Applicants submit that the Declaration under 37 CFR 1.132 submitted on March 26, 2007, and the accompanying color (and black and white) pictures (one set of each) show that when the Weber et al. process is applied to the core particles using several different conditions, no continuous Ni metal coating was obtained.

The argument is unconvincing because Weber et al. expressly teach that plated metal layers are substantially uniform (See column 4, lines 55-56).

(H) Applicants submit that no columnar structures were found in any of the examples using the Weber et al. process. It is therefore believed that in view of the submitted Declaration, the claims in this application are allowable over the prior art of record. Weber et al. do not have enough support of the specific method for forming the nickel film on the glass powder.

In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). Moreover, Weber et al is a *secondary* reference.

(I) Applicants submit that Segawa et al. relate to apparatus for electroless plating and method for forming conductive film. Segawa et al. disclose to provide an apparatus for an electroless plating capable of suppressing a change of a plating liquid with time and carrying out electroless plating homogeneously and accurately, and provide a method for forming a conductive film (abstract). Segawa et al. do not disclose claimed steps of (II) and (III).

The Examiner respectfully disagrees with this argument. Segawa et al. is a *tertiary* reference which is relied upon to show that in order to prevent reduction of life of a plating solution and obtain homogeneous good plating deposits (See P31), it is desirable to hold each component of a plating solution separately in two or more tanks and mix them with a plating cup 21 (See P51), for example, a metal solution containing chelating agent separately from a reducing agent containing pH regulator (See P15, 23, 51-53). In response to applicant's argument that Segawa et al is nonanalogous art, it has been held that a prior art reference must either be in the field of applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the applicant was concerned, in order to be relied upon as a basis for rejection of the claimed invention. See *In re Oetiker*, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992). In this case, Segawa et al is reasonably pertinent to the particular problem with which the applicant was concerned.

### ***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Elena Tsoy whose telephone number is 571-272-1429. The examiner can normally be reached on Monday-Thursday, 9:00AM - 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy Meeks can be reached on 571-272-1423. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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November 7, 2007